

Anti-Corruption Education in Management Programmes: Learning Style Versatility and Artificial Intelligence (AI) Applications in Course Development and Delivery

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Abstract: The effective anti-corruption education requires careful understanding of the teaching-learning context. At the different stages of the designing an anti-corruption focuses course, we need to consider factors related to target learning group as well as the respective context in which they are. Learning style versatility is an important factor that needs to be analyzed for an effective and outcome linked course in Anti-Corruption. The emergence of artificial intelligence provides significant opportunities in improving the outcome-focused course design. Automating the identification of learning style versatility of target learning group can simplify the process of customizing the course contents, pedagogy and assessment framework for the given learning group. The article is conceptual in nature and provides a generic framework for applying artificial intelligence (AI) in developing the anti-corruption course, tailored to the target learning group characteristics. The suggested framework can be adapted under the different teaching-learning contexts, as per the need. The anti-corruption is an extended and applied area of ethics and, therefore, the framework can also be extended in developing course modules related to other similar themes.

Keywords: Anti-corruption; Artificial Intelligence (AI), Ethics, Learning Style Versatility, Course Design

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Introduction

The main tasks in any course curriculum design includes the three broader stages: defining the course learning

outcomes; identifying the content sources; and setting the pedagogy. All these three stages require careful analysis of the target learning groups and a number of other context related variables. The analysis of learning style is one among the important factors that play important role in the curriculum development. The same steps are applied in the curriculum design and development in any of the courses in higher education, however, the focus on a particular stage could vary depending on the nature of subject, level and purpose of the course.

The course delivery and assessment are the part of implementation and once the designed course is ready for delivery, a number of contextual as well as target learning group related factors also becomes important for effective implementation. With the help of AI, many of the tasks related to course design and delivery can be simplified. While proposing the AI applications, we mainly aim to develop the mechanism where AI can complement the faculty/expert efforts and simplify the selection, analysis and feedback with right kind of data use. In next sections, we will be more specifically exploring the following dimensions in relation to anti-corruption education:

- a. Identification of different factors that influence the course design and delivery
- b. Analyzing the role of Learning Style Versatility (LSV) in effective curriculum design and delivery.
- c. Identification of possible AI application areas in course development and delivery.
- d. Suggesting a generic framework for AI enabled course development and delivery framework.

The analysis undertaken in the chapter is purely based on the secondary data sources. Most of the insights have been drawn from the published literature by experts or credible agencies. The application areas for AI has been suggested to improve the process, however, the chapter does not provide any technical details for designing the AI applications, as it is beyond the scope.

Factors Influencing Curriculum Design and Delivery

There is no universally acceptable model for standardized course development. Universities and institutions of education have suggested different frameworks which are often adapted in the process of curriculum development under any given situation. It is important to note that broadly the steps suggested in different frameworks are similar or quite related. For example; The Centre for Teaching and Learning, University of North Carolina, Charlotte suggests seven stepped approach for curriculum development. Adapting these steps in context of anti-corruption education, the following are the steps (UNCC, n.d.):

- A. Deciding expected learning goals for target group (Goals)
- B. Identification of best teaching approaches for anti-corruption (Methods/ Approaches)
- C. Identification of assessment for learning/ testing the progress (Assessment Tools)
- D. Availability of Time and Space (Duration)
- E. Availability of Technological Tools (Technology)
- F. Learning Sequence Planning (Order)

G. Experience based reflections for improvement (Reflection)

There are different considerations in designing an effective course curriculum. The analysis of learning styles of the target learning group is considered to be an important consideration in curriculum design. However, in addition to the learning styles of the target learning groups, there are other variables also that must be taken into account while developing an effective ethics teaching plan (Sims and Felton, Jr., 2005). Teaching anti-corruption is a part of applied ethics education, the following factors can be considered in designing effective teaching strategy:

F1: The learning styles of the members in target group (Learning Style)

F2: The nature of the ethics learning task (Nature)

F3: Target group's level of readiness for learning ethical concepts (Preparedness)

F4: Previous experience and knowledge in area of Anti-Corruption/ ethics (Relevant Knowledge/ Experience.

F5: The personality related factors of both students and teachers (Personality)

F6: The personality of other learners in the target group (Peer)

F7: The political ethos of the institution, including department/ school where the anti-corruption course is to be taught (Institutional Ethos)

F8: Dominant values and traditions of the culture, which the students belong to (Cultural Context)

F9: Balance between the active engagements of students with issues in real-life situations (Relevance);

The steps for curriculum development (A to G) and the important factors/ considerations in the curriculum development (F1 to F9) are the two main dimensions for developing the initial course map. Combining these two dimensions will help in developing the initial check-list for identification of the relevant issues. The process has been described in the following section.

Developing Initial Course Framework

The Exhibit 1.0 presents a 7 X 9 matrix which can be used as a check list for development of an effective anti-corruption curriculum. The specific requirements for each combination of the matrix could be highlighted. However, before mapping it as the larger matrix, as suggested, the specific combinations of the relevant factor-steps can be identified in the given context. Once, the check-list is confirmed, the requirements of the curriculum can be analysed in consultation with the different relevant experts and other stakeholder groups like target learning group, industry and organizations including NGOs, sponsors (mainly in case of customized executive programmes), regulatory bodies, etc.

Wherever, the secondary sources benchmarks are available, the same can be considered unless there are specific contextualization needs relating to the design and delivery of the curriculum. This is important to note that use of the term matrix here is in general sense to present a two-dimensional analytical table, not exactly the matrix comprising numbers. Based on the above the two main steps for anti-corruption course development would

comprise of: First, the checking of relevant Step-Factor map combination; and second, the detailed analysis of the specific requirements for given combination of the Step-Factor. Based on the analysis, the following elements of the desired course can be presented in the given template (Exhibit 2.0).

Exhibit 1.0: Initial Course Mapping Checklist

Steps in Course Development	Considerations in Course Development								
	F1	F2	F3	F4	F5	F6	F7	F8	F9
Goals									
Teaching Approaches									
Assessment Tools									
Duration									
Technology									
Order									
Reflection									

Exhibit 2.0: Initial Course Design Template

Course Design Elements	Check-List/ Description
Course Description	<ul style="list-style-type: none"> Does it provide specific description of what the course intends to achieve?
Course Learning Outcomes (COs)	<ul style="list-style-type: none"> Do the COs provide the different combination of knowledge, skill and attitude related to anti-corruption/ ethical situation handling?
Course Contents (Duration)	<ul style="list-style-type: none"> Are the contents/ modules aligned to the COs? Have we adequately defined the distribution of contents to the time available?
Assessment Tools and Duration	<ul style="list-style-type: none"> Do the assessment methods match with the requirements of module learning as the COs?
Technological Support	<ul style="list-style-type: none"> What are the technological tools available to enhance the effectiveness of learning, delivery and assessment?
Innovative Pedagogical Methods	<ul style="list-style-type: none"> Are we using any innovative pedagogical method which is aligned to the target learning group characteristics?
References/ Support Material	<ul style="list-style-type: none"> Are available reading/ learning materials adequate and relevant?
CO Achievement Methodology	<ul style="list-style-type: none"> Have we defined how we are going to measure the accomplishment of the COs for the proposed course?

Learning Style Versatility (LSV) and Anti-Corruption Curriculum

The recent research shows the importance of Learning Style Versatility (LSV) in effecting teaching and learning. Learning style versatility (LSV) can not only help in better learning performance but also helps institutions in innovating, making education relevant and ensuring better return on education (Amann, 2021). LSV can be used for effective customization of contents and course-delivery.

The concept of LSV is based on the learning styles suggested by Peter Honey and Alan Mumford who suggested four distinct learning styles i.e. Activist, Theorist; Pragmatist and Reflector (Honey and Mumford, 1982). These different learning styles reflect the different individual preferences or approaches for the learning. The authors suggest that in order to effectively learn, one must know what is one's preferred learning style. However, they also suggest to have versatility in learning styles for effective learning i.e. one should try to be open to other learning preferences as well in order to maximize one's learning outcome (UOL, n.d.).

Extending and testing the concept in context of business and management education, it was found that the learning style versatility can add significantly to learning effectiveness of the target learning groups (Amann, 2021). Therefore, it becomes quite important for the learner and educator both that they try to align the teaching-learning in such a ways that it also creates interest for the learner to expand one's learning style and thus, contributing to enhancing the learning effectiveness at optimum level of efforts. Extending the concept in context of anti-corruption course development and delivery, we can address a number of issues related to the course planning (Exhibit 2.0) and its' delivery.

It is quite evident that under the limited time and scope of any course curriculum, we can not change the learning style of any target group, however, we can try to design the course (content, pedagogy and assessment) in such a way that: fits to the Learning Style Versatility (LSV) of the given target group; and contributes to enhance the LSV of the group through balanced design. We understand that the learning-journey in any course includes variety of different experiences which may be planned or spontaneous, direct or indirect and formal or informal. Understanding the LSV also helps in improving the learning skills of the group as well as the planned learning processes. The Learning Style Versatility (LSV) of the target learning group can be profiled to ensure that the pedagogy, content and assessment strategies for the course is relevant and attractive to the group we are designing for. The use of LSV not only helps in making learning easier but it also makes the learning more enjoyable and effective. Once we understand how the target group broadly learns, the learning opportunities i.e. content, pedagogy and assessment tools can be matched accordingly. Therefore, at the next stage, which would be third step of the process, the learning style versatility of the target learning group can be measured analysed. The next step can be alignment of the content, pedagogy and assessment in view of the existing group LSV. However, it is important to note that before aligning the content, pedagogy and assessment tools, it would be important to subjectively analyse the LSV characteristics of the target group, as the target group may require interventions to enhance LSV for improving the learning experience.

Therefore, the LSV should not only be interpreted and analysed for the entire LSV score rather the trends within the peer-group i.e. understanding the ‘learning style (s) which are more dominating in a group than others’. This is quite important as role of peer interaction and peer-group learning is quite important in any higher education course. Anti-corruption is such a highly contextual theme, which makes the peer-group learning extremely important for the overall course effectiveness. Therefore, it would be important to match the content, pedagogy and assessment with the group characteristics by matching with the LSV as well as the dominant peer-group learning style (s) in the given context. This task can be effectively done with the application of AI, as it can be helpful in eliminating the complexities, improving the accuracy and saving the time in analysis.

Developing Anti-Corruption Course: A Generic Framework for AI Application

The Artificial Intelligence (AI) can be very useful in the curriculum design. The AI technology provides opportunity to learn from the previous experiences. Systematic learning from the prior experience can help in continuous improvement of any course.

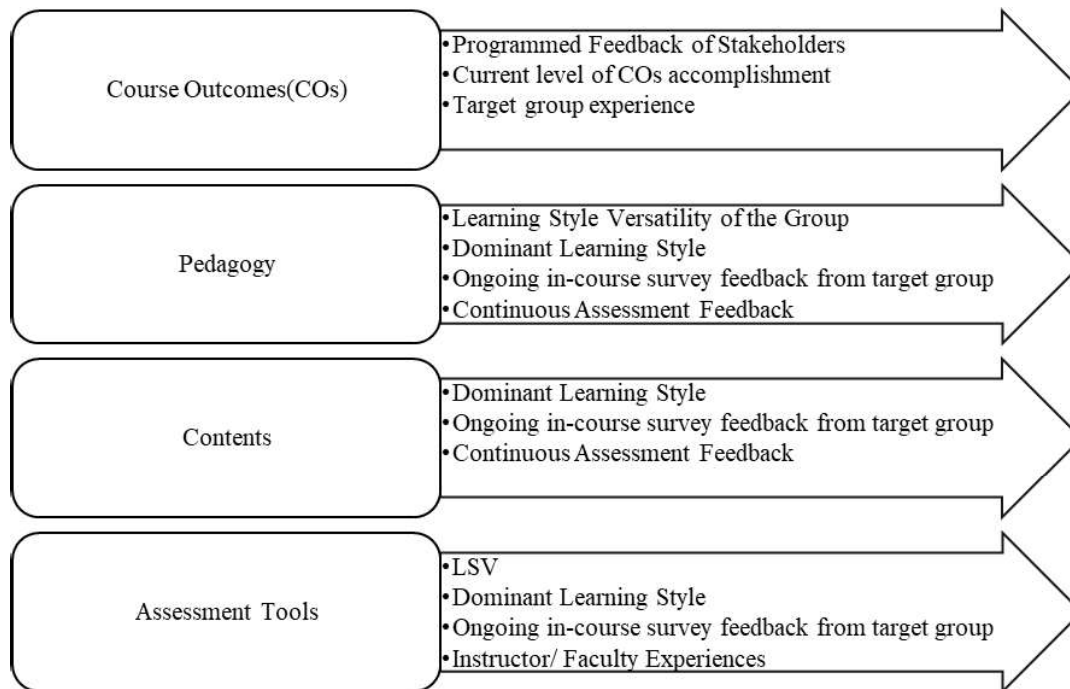


Figure 1.0: Specific Inputs for AI Applications in Different Areas of Course Development

The AI based curriculum development can facilitate improvements across the different areas ranging from course learning outcome to pedagogy selection and assessment design. However, it is important to understand that for specific AI application area, the inputs and sources must be defined carefully in developing the algorithm. Figure 1.0 shows the important areas of AI applications with required inputs and sources. This is an indicative and as per the need, it can be further customized.

Therefore, at the next stage, the input requirements for AI programme development must be specified. The effective application of AI would require interface with the different processes during and after course. This will help in collecting data from the different sources, and suggesting improvements as per the defined algorithm. However, in order to develop an AI programme for continuous improvement in the Anti-Corruption courses, it would be important to define the types of the input information requirements for the different aspects of the curriculum (Figure 1.0). Using the information, the desired improvements in the curriculum can be realized on the real-time basis. Also, it can help in predicting the LSV improvement potential in future cohorts based on the cumulative ongoing and previous cohort experiences in Anti-Corruption teaching.

Combining the previous stages, a generic framework for AI-enabled Anti-Corruption Course Development is suggested in Figure 2.0. The proposed framework for AI-enabled Anti-Corruption course development includes five steps. Each of these steps have been discussed earlier in the Chapter.

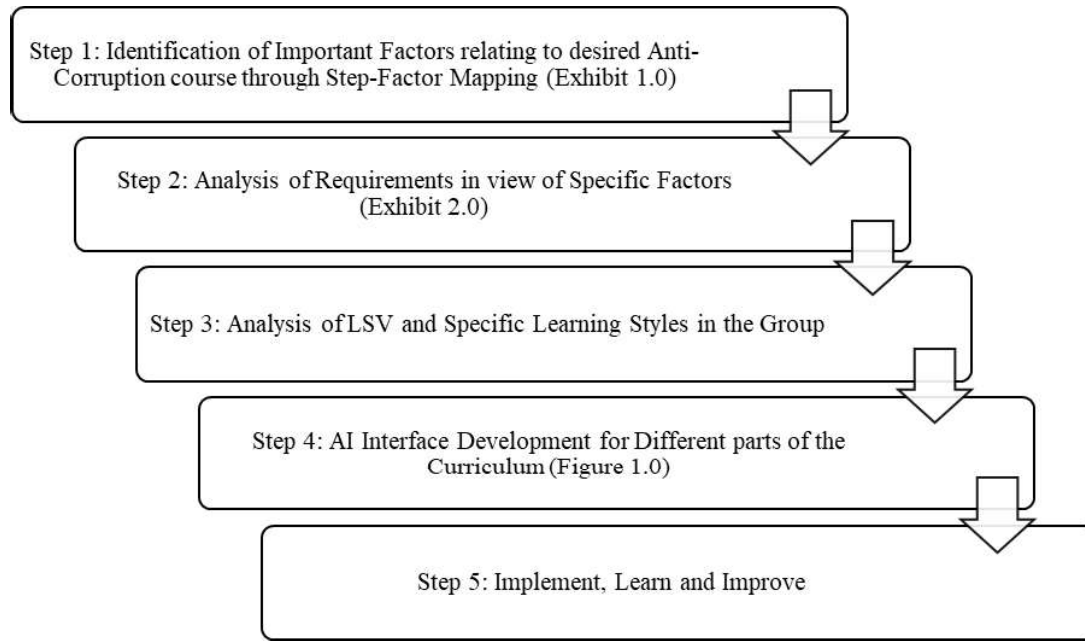


Figure 2.0: Generic Framework for AI Enabled Anti-Corruption Course Development

The AI interface can be planned for both Step 4.0 i.e. the aspects related to Anti-corruption curriculum as well as for entire process (Figure 2.0). The AI applications can also be deployed for the analysis of the specific steps in the framework. Like any other AI system, the effectiveness of the application would depend on the volume of the data and accuracy in defining the input-output relationship. However, the main advantage of the framework would be in terms of its' potential to offer contextually relevant curriculum with real-time improvement, which is in-built in the process.

The technical aspects of the AI interface are to be developed by the experts in consultation with the concerned

faculty and target learning groups. Once the system is functional, it will provide opportunities for improvements based on accumulative experience of the cohorts. After initial fine-tuning and improvements in the framework, the standardized AI-enabled curriculum development for Anti-Corruption can be developed.

The suggested framework is primarily for the design and delivery of Anti-Corruption course in view of the highly contextual nature of the course. The framework is generic and with little customization, it could be applied to the different courses. The above framework can be very useful for courses, which require high degree of contextual alignment in course outcome, pedagogy, content and assessment.

Consideration in AI-Enabled Course Development

Application of AI in course development requires a number of issues to be addressed. The AI-enabled system complements the conventional course development process by simplifying the data identification and analysis, required for effective design and delivery of the course. The following factors should be considered while developing and delivering the AI-enabled course:

1. The technological support system i.e. AI programme development and its' interface with course process must be closely monitored by the faculty member/ instructor facilitating the course.
2. As far as possible, the real-time improvements should be encouraged, as that is one of the major advantages of using the technology.
3. Profiling of LSV and specific LS should also be done using AI and the output of the system can be integrated with the broader curriculum development system.
4. Regular monitoring of outcomes, contents, and pedagogy and assessment tools is required during the initial phases of the AI-enabled course development system.
5. All the participants and other stakeholders must be sensitized about the technological aspects of the entire process so that the desired feedback and improvements can be realized smoothly.
6. As far as possible, during the initial application phase, the automated results should also be supplemented with manual change option so that in case of an undesired deviation, the corrective action can be introduced by the faculty concerned.
7. The improvements in the curriculum planning and delivery should be based on cumulative learning from the system and, therefore, this aspect requires consideration at the stage of system design.

The faculty members, course planners and AI developments should work closely to develop system for value addition in the teaching-learning experience and the process. In previous sections, we have discussed the main

areas for AI application in Anti-Corruption course design. Some illustrations of how AI can be used across the different dimensions of the course design and delivery process is summarised in the D3 Approach below (Exhibit 3.0).

Exhibit 3.0: Dynamic Course Improvement using D3 Approach

D1: Dynamic Content Selection

Identifying the type of content (case, article, Chapter, etc.) from the already identified pool of resources (Example: PRME Anti-Corruption Toolkit, PRME 2013) and dynamically improving the course contents based on learner's learning style and demonstrated progress in the course. This implies that the course outcome and outline to be defined in the beginning but the process of selecting the contents will depend on the selected variables.

D2: Dynamic Pedagogy Update

This can be used as a real-time feedback driven system. The course facilitator can first select a set of pedagogical tools based on the initial analysis. Based on the learner's performance and need of the topic/theme in focus, the technology interface can be used for integrating the inputs in improving the pedagogy as per the need and context. Application of AI is particularly useful in view of accuracy enhancement with the increasing number of participants.

D3: Dynamic Assessment Improvement

The improvement in the assessment process can also be realized using the technology. So far, the feedback obtained through the initial course assessment mainly contributes to performance assessment of the learners, however, using the technology the assessment performance of one cycle can be used as an input for improving the right assessment methods during the next cycle.

Assessment, pedagogy and contents are deeply integrated in designing and delivering any outcome-focused course. It can be seen that the use of technology, particularly AI, can be very effective in integrating these three dimensions for improved learning experience as well as better learning outcome. The integrated D3 approach to dynamic updates can be used and applied for design and delivery of context focused Anti-corruption course. It is important to note that the distinct feature of this approach lies in its ability to track and utilize the real-time changes for making the learning effective and interesting.

Conclusions

The AI application can improve the relevance and effectiveness of the Anti-Corruption course planning and delivery. The experience shows that the Anti-corruption course, which can be considered as a part of applied

ethics education, is highly contextual in nature. The contextual relevance of the course can be enhanced by providing real-time inputs regarding the requirements in the given context during the course development process. Similarly, the participants experiences can be recorded for real-time improvement during the course delivery.

The Learning Style Versatility (LSV) can be very useful in developing an effective course for Anti-Corruption education. The suggested generic framework for AI – enabled course development and delivery can bring significant improvements not only in enhancing the user experiences but also in making the course contextually relevant and effective. The important feature of AI-enabled course development lies in its' unmatched potential for real-time improvement, which facilitates the continuous interaction of the different stakeholders on ongoing basis with aim of continuous improvement and impact.

Let us be ready for the innovation in the course development though integration of LSV with power of Artificial Intelligence. The framework is generic and, therefore, with some customization can be adapted in different courses, which requires high degree of contextual relevance. However, for developing the concept to practical model, the further consultation of experts in technology and educational instruction design will be desirable.

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